UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,102	11/07/2001	Laszlo Hars	US 010171	4867

24737 7590 03/01/2005

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
CERVETTI, DAVID GARCIA	
ART UNIT	**PAPER NUMBER**
2136	

DATE MAILED: 03/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/986,102	HARS, LASZLO	
	Examiner	Art Unit	
	David G. Cervetti	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☒ Claim(s) *10, 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 23 (page 9, paragraph 29, line 2), 46 (page 12, paragraph 35, line 9), 48, 50 (page 12, paragraph 36, lines 4-7), 114 (page 16, paragraph 43, line 4). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "24" has been used to designate both "header source" and "signal source" (page 11, line 6, and line 21). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application

must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The disclosure is objected to because of the following informalities: "" (page 2, line 2), "" (page 6, line 11), "" (page 6, line 29). While well known in the art, these terms have not been defined.

Claim Objections

5. Claim 10 is objected to because of the following informalities: as per amendment filed on March 15, 2002, claim 10 reads "the medium of claim 7 wherein the digital content includes media content". Claim 7 is a method claim, perhaps "the medium of claim 9..." was intended. The Examiner has interpreted claim 10 to read "the medium of claim 9 wherein the digital content includes media content" for the purpose of this Office Action. Appropriate correction is required.

6. Claim 22 is objected to because of the following informalities: "the method of claim 11". Claim 11 recites "apparatus for...", perhaps "the apparatus of claim 11..." was intended. Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US Patent Number: 6,154,571), and further in view of Fridrich et al. (NPL "Robust Hash Functions for Digital Watermarking").

Regarding claim 1, Cox et al. teach a method of applying watermarks WM_1 . . . WM_k . . . WM_N to sections of 1 . . . k . . . N of digital content on a recording medium having an identification number (CDID) comprising combining numerical values representing CDID, N and k (column 5, 60-67, column 6, lines 1-5). Cox et al. do not disclose concatenating values and using a hashing function. However, Fridrich et al. teach combining numerical values representing CDID, N and k in accordance with a concatenated hashing function to derive a numerical value for WM_i, and applying the numerical value for WM_1 to section i, where i is selectively each of 1 . . . N (section 6, Generating a watermark using the hash", column 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to concatenate the numerical values using a hashing function. One of ordinary skill in the art would have been motivated to perform such a modification to generate a pseudo-random sequence of a desired length (Fridrich et al., section 6, Generating a watermark using the hash", column 1).

Regarding claim 2, the combination of Cox et al. and Fridrich et al. teach the limitations as set forth under claim 1 above. Furthermore, Cox et al. teach a method of checking the watermark of section j of read digital content having watermarks applied in accordance with the method of claim 1 comprising determining the numerical values of CDID, j and N from the read digital content, determining the watermark WM_{ja} actually read from section j, combining the determined numerical values of CDID, j and N by using the same hashing function that is used to derive WM_i to derive a digital signal for the watermark WM_{jr} that should be read from section j, and comparing the digital signal

for the watermark WM_{jr} that should be read from section j with an indication of the numerical value for the watermark WM_{ja} actually read from section j (column 5, 60-67, column 6, lines 1-5).

Regarding claim 3, the combination of Cox et al. and Fridrich et al. teach the limitations as set forth under claim 2 above. Furthermore, Fridrich et al. teach wherein CDID is read directly from the medium and WM_{jr} that should be read from section j is derived from H(CDID◊N◊j), where H is the hashing function and ◊ is the concatenation of numbers (section 6, Generating a watermark using the hash", column 1).

Regarding claim 4, the combination of Cox et al. and Fridrich et al. teach the limitations as set forth under claim 2 above. Furthermore, Fridrich et al. teach the method wherein the correctness of the recorded CDID is determined by performing a calculation on value WM_{ja} actually read from section j (section 6, Generating a watermark using the hash", column 1).

Regarding claim 5, the combination of Cox et al. and Fridrich et al. teach the limitations as set forth under claim 4 above. Furthermore, Cox et al. teach the method of claim 4 wherein H(CDID) is determined by subtracting $H(N_j)$ from the value of WM_{ja} actually read from section j (column 5, lines 59-67).

9. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. and Fridrich et al. as applied to claim 5 above, and further in view of Kocher et al. (US Patent Number: 6,289,455).

Regarding claim 6, the combination of Cox et al. and Fridrich et al. do not disclose the method wherein the value that should be read from section j is calculated in

accordance with H(N◊j) to derive a first hashed function, and combining the first hashed function with the determined value of an invertible 2 argument operation that is hashed by hashing function H. However, Kocher et al. teach the method wherein the value that should be read from section j is calculated in accordance with H(N◊j) to derive a first hashed function, and combining the first hashed function with the determined value of an invertible 2 argument operation that is hashed by hashing function H (column 20, lines 55-65). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the hashed values. One of ordinary skill in the art would have been motivated to perform such a modification to provide for better security (column 20, lines 55-65).

Regarding claim 7, the combination of Cox et al., Fridrich et al., and Kocher et al. teach the limitations as set forth under claim 6 above. Furthermore, Kocher et al. teach wherein the invertible 2 argument operation is an exclusive or function (column 20, lines 55-65).

Regarding claim 8, the combination of Cox et al., Fridrich et al., and Kocher et al. teach the limitations as set forth under claim 6 above. Furthermore, Kocher et al. teach wherein the invertible 2 argument operation is a modular addition function (column 20, lines 55-67).

10. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. and Fridrich et al. as applied to claims 1 and 2 respectively above, and further in view of Cox et al. (US Patent Number: 5,915,027).

Regarding claims 19-20, the combination of Cox et al. and Fridrich et al. do not disclose the method wherein the number of bits in the numerical value of WM_k is in the range of 20 to 24. However, Cox et al. (US Patent Number: 5,915,027) teach the method wherein the number of bits in the numerical value of WM_k is in the range of 20 to 24 (column 8, lines 43-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pseudo-random noise in the range of 11-25. One of ordinary skill in the art would have been motivated to perform such a modification to protect digital content without incurring a high computational requirement (Cox et al., US Patent Number: 5,915,027, column 2, lines 36-52).

11. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US Patent Number: 6,154,571), and further in view of Fridrich et al. (NPL "Robust Hash Functions for Digital Watermarking").

Regarding claim 9, Cox et al. teach a recording medium assigned with a numerical ID number (CDID), the medium including digital content, at least some of the digital content having watermarked sections 1 . . . i . . . N (column 5, 60-67, column 6, lines 1-5). Cox et al. do not disclose the watermark in section i having a numerical value in accordance with a hashed concatenated function of CDID, N and i. However, Fridrich et al. teach the watermark in section i having a numerical value in accordance with a hashed concatenated function of CDID, N and i (section 6, Generating a watermark using the hash", column 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to concatenate the numerical

values using a hashing function. One of ordinary skill in the art would have been motivated to perform such a modification to generate a pseudo-random sequence of a desired length (Fridrich et al., section 6, Generating a watermark using the hash", column 1).

Regarding claim 10, the combination of Cox et al. with Fridrich et al. teaches the limitations as set forth under claim 9 above. Furthermore, Cox et al. teach wherein the digital content includes media content (column 5, lines 26-30, 59-65).

12. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. and Fridrich et al. as applied to claim 9 above, and further in view of Cox et al. (US Patent Number: 5,915,027).

Regarding claim 21, the combination of Cox et al. and Fridrich et al. do not disclose the medium wherein the numerical value is represented by 20 to 24 bits. However, Cox et al. (US Patent Number: 5,915,027) teach the medium wherein the numerical value is represented by 20 to 24 bits (column 8, lines 43-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pseudo-random noise in the range of 11-25. One of ordinary skill in the art would have been motivated to perform such a modification to protect digital content without incurring a high computational requirement (Cox et al., US Patent Number: 5,915,027, column 2, lines 36-52).

13. Claims 11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US Patent Number: 6,154,571), and further in view of Fridrich et al. (NPL "Robust Hash Functions for Digital Watermarking").

Regarding claim 11, Cox et al. teach apparatus for applying watermarks WM_1 . . . WM_k . . . WM_N to sections 1 . . . k . . . N of a recording medium adapted to have an identification number (CDID) and to include digital content in at least sections 1 . . . k . . . N, the apparatus comprising a processor arrangement for combining for each of 1 . . . k . . . N digital signals indicative of CDID, k and N (column 5, 60-67, column 6, lines 1-5) and a write unit for applying the hashed concatenated output signal to the recording medium (column 4, 26-38, column 9, lines 40-49). Cox et al. do not disclose the signals indicative of CDID, k and N being combined in accordance with a concatenated hashing function to derive a hashed concatenated output signal. However, Fridrich et al. teach the signals indicative of CDID, k and N being combined in accordance with a concatenated hashing function to derive a hashed concatenated output signal (section 6, Generating a watermark using the hash", column 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to concatenate the numerical values using a hashing function. One of ordinary skill in the art would have been motivated to perform such a modification to generate a pseudo-random sequence of a desired length (Fridrich et al., section 6, Generating a watermark using the hash", column 1).

Regarding claim 13, the combination the combination of Cox et al. with Fridrich et al. teaches the limitations as set forth under claim 11 above. Furthermore, Fridrich et al. teach wherein the processor arrangement is arranged to respond to CDID as read from the medium and for determining WM_{jr} and H(CDID◊N◊j), where H is the hashing

function and ◊ is the concatenation of numbers (section 6, Generating a watermark using the hash", column 1).

14. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. and Fridrich et al. as applied to claim 11 above, and further in view of Cox et al. (US Patent Number: 5,915,027).

Regarding claim 22, the combination of Cox et al. and Fridrich et al. do not disclose wherein the number of bits in the numerical value of WM_k is in the range of 20 to 24. However, Cox et al. (US Patent Number: 5,915,027) teach wherein the number of bits in the numerical value of WM_k is in the range of 20 to 24 (column 8, lines 43-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pseudo-random noise in the range of 11-25. One of ordinary skill in the art would have been motivated to perform such a modification to protect digital content without incurring a high computational requirement (Cox et al., US Patent Number: 5,915,027, column 2, lines 36-52).

15. Claims 12, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US Patent Number: 6,154,571), and further in view of Fridrich et al. (NPL "Robust Hash Functions for Digital Watermarking").

Regarding claim 12, Cox et al. teach checking the validity of digital watermarks in sections 1 . . . k . . . N, of a digital recording medium having an identification number (CDID) and digital content recorded in at least sections 1 . . . j . . . N of the medium, the apparatus comprising a read unit for reading the digital content and the watermarks and for deriving digital signals indicative thereof, a processor arrangement connected to be

responsive to the read unit for determining (a) the numerical value of bits WM_{jr} in watermarks that should be recorded in at least some of sections 1 . . '. j . . . N (column 5, 60-67, column 6, lines 1-5), (b) the numerical values of bits WM_{ja} actually read from the medium (column 5, 60-67), and (c) the relative values of WM_{jr} and WM_{ja} (column 6, lines 1-15). Cox et al. do not disclose watermarks in accordance with a hashed function of concatenated values of a determined value of CDID combined with H, j and N. However, Fridrich et al. teach watermarks in accordance with a hashed function of concatenated values of a determined value of CDID combined with H, j and N (section 6, Generating a watermark using the hash", column 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to concatenate the numerical values using a hashing function. One of ordinary skill in the art would have been motivated to perform such a modification to generate a pseudo-random sequence of a desired length (Fridrich et al., section 6, Generating a watermark using the hash", column 1).

Regarding claim 14, the combination of Cox et al. and Fridrich et al. teach the limitations as set forth under claim 12 above. Furthermore, Fridrich et al. teach wherein the processor arrangement is arranged for calculating the value of CDID in response to the value WM_{ja} actually read from section j (section 6, Generating a watermark using the hash", column 1).

Regarding claim 15, the combination of Cox et al. and Fridrich et al. teach the limitations as set forth under claim 14 above. Furthermore, Fridrich et al. teach the apparatus wherein the processor arrangement is arranged to respond to CDID as read

from the medium and for determining WM_{jr} as actually read from section j (section 6, Generating a watermark using the hash", column 1).

Regarding claim 16, the combination of Cox et al. and Fridrich et al. teach the limitations as set forth under claim 15 above. Furthermore, Cox et al. teach the apparatus wherein the processor arrangement is arranged to determine CDID by subtracting of H(N◊k) from the value of WM_{ja} actually read from section j (column 5, lines 59-67).

16. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. and Fridrich et al. as applied to claim 16 above, and further in view of Kocher et al. (US Patent Number: 6,289,455).

Regarding claim 17, the combination of Cox et al. and Fridrich et al. do not disclose wherein the processor arrangement is arranged to (a) calculate the value that should be read from section j in accordance with H(N◊j) to derive a first hashed function and (b) combine the first hashed function with the determined value of an invertible 2 argument operation that is hashed by hashing function H. However, Kocher et al. teach wherein the processor arrangement is arranged to (a) calculate the value that should be read from section j in accordance with H(N◊j) to derive a first hashed function and (b) combine the first hashed function with the determined value of an invertible 2 argument operation that is hashed by hashing function H (column 20, lines 55-65). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the hashed values. One of ordinary skill in the art would have

been motivated to perform such a modification to provide for better security (column 20, lines 55-65).

Regarding claim 18, the combination of Cox et al., Fridrich et al., and Kocher et al. teach the limitations as set forth under claim 17 above. Furthermore, Kocher et al. teach wherein the invertible 2 argument operation is an exclusive or function (column 20, lines 55-65).

17. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. and Fridrich et al. as applied to claim 12 above, and further in view of Cox et al. (US Patent Number: 5,915,027).

Regarding claim 23, the combination of Cox et al. and Fridrich et al. do not disclose wherein the number of bits in the numerical value of WM_k is in the range of 20 to 24. However, Cox et al. (US Patent Number: 5,915,027) teach wherein the number of bits in the numerical value of WM_k is in the range of 20 to 24 (column 8, lines 43-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pseudo-random noise in the range of 11-25. One of ordinary skill in the art would have been motivated to perform such a modification to protect digital content without incurring a high computational requirement (Cox et al., US Patent Number: 5,915,027, column 2, lines 36-52).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David G. Cervetti whose telephone number is (571) 272-5861. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DGC

GREGORY MORSE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100